ABSTRACT

A virtualization infrastructure that allows multiple guest partitions (24, 26, 28) to run within a host hardware partition (10). The host system is divided into distinct logical or virtual partitions (12-28) and special infrastructure partitions (12-22) are implemented to control resource management and to control physical I/O device drivers that are, in turn, used by operating systems in other distinct logical or virtual guest partitions. Host hardware resource management runs as a tracking application in a resource management "ultravisor" partition (14), while host resource management decisions are performed in a higher level command partition (20) based on policies maintained in a separate operations partition (22). Host hardware I/O management is implemented in special redundant I/O partitions (16, 18). Operating systems in other logical or virtual partitions communicate with the I/O partitions via memory channels (38, 48) established by the ultravisor partition.